

# MUSIC IN THE HEART

## Network administrator, expert craftsman

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**KEESLER AIR FORCE BASE, Miss.** — For most people, making music means strumming a guitar, playing a keyboard, drumming a beat or singing a song.

When Fred McMichael makes music, he often makes the instrument himself. After creating more than 50 violins and 20 guitars in the past 30 years, he tackled his biggest challenge yet: a handcrafted harp.

"As far as I know, all harps are handmade, not mass produced," said Mr. McMichael, a local network administrator and software developer with the 338th Training Squadron here. "Until I built mine, I'd never seen a harp in real life, only pictures or on television, and I've never met a person who plays one."

Going into the project, he said he thought the process would be easy, "but I was totally wrong.

"I can carve an entire violin or guitar in five days, only working a few hours each day," Mr. McMichael said. "I'd never recommend to anyone to build a harp from scratch until they have a few decades of violin- and guitar-making experience. You have to be a master at wood-working, very patient and precise.

"If all goes somewhat right, you'll end up with a great instrument (that can be passed) from generation to generation," he said. "The harp also tends to make you look wealthy -- who else do you know that has a harp in the living room?"

Mr. McMichael began the project more than three years ago, but technical problems in building the back of the sound board slowed his progress. So far, he has spent more than 2,000 hours building the instrument. He is still reworking and refining a few things and plans to hand-carve vine and leaf patterns and cover them with gold leaf.

"You have to go slowly with a new harp. After it ages, it sounds better," Mr. McMichael said. "Harps go out of tune and break strings like crazy. Humidity, air conditioning and heat change the pitch."

His harp, constructed of Douglas fir inlaid with teak, is 56 inches tall and weighs more than 40 pounds. Mr. McMichael spent about \$1,200 in construction for the

instrument valued at up to \$6,000.

He purchased plans, strings, sharpening levers and tuning pins.

"The plans only offer a general size, not an exact fit," he said. "When all parts are assembled, it takes hours of tweaking to make everything fit properly."

The column that connects the top and bottom of the harp has to withstand more than 1,000 pounds of pressure. Mr. McMichael said the large stocks of wood he needed were nearly impossible to find, so each piece was built by gluing smaller pieces together. The huge block was turned on a lathe in two pieces and sanded to match the two halves.

The neck, the distinctive curved part of the harp, had to be carved with a hammer and chisels.

"Unfortunately, when the harp was completed, during stringing up and tightening, the smaller end of the neck snapped from the pressure," Mr. McMichael said. "I'm glad my hands weren't in the way -- it would've been like being hit with a softball bat."

He ended up carving a trench in the top and bottom of the neck and embedding a steel bar.

The sound box acts like a megaphone and amplifies the vibrations of the strings and soundboard.

"If the sound (box), which amplifies the vibrations of the strings, is too thick, the harp's volume is too weak," he said. "If it's too thin, the strings have a tinny sound."

He had to drill precise holes for the tuning pins and bridge pins before he was ready to string the instrument.

The harp has 36 strings. The lower notes have thicker, longer strings than the high-pitch strings. Red and black strings provide reference points for the player.

"On my next harp, I'll build my own strings," Mr. McMichael said. "Custom strings can cost up to \$17 each from a manufacturer."

His next project? A 75-inch full-size orchestra harp with pedals.



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**Mr. McMichael tunes his hand-crafted harp.**